

What Is Claimed Is:

1. An automatic beam limiter circuit for controlling a brightness/contrast of a video signal input to a cathode-ray tube (CRT) comprising:

a conversion circuit for converting an analog signal to a digital signal, wherein the analog signal is generated from the video signal;

a horizontal average circuit for calculating a horizontal average of at least a portion of the digital signal;

a vertical average circuit for calculating a vertical average of the horizontal average;

a comparison circuit for comparing a first calculation value calculated between a reference value and the vertical average with a second calculation value calculated between the reference value and the horizontal average, and outputting a first comparison signal and a second comparison signal based on the comparison results; and

a gain control circuit for producing a gain control signal in response to the first comparison and second comparison signals for adjusting the brightness/contrast of the video signal input to the CRT.

2. The automatic beam limiter circuit of claim 1, further comprises an inversion circuit for inverting the horizontal average of the horizontal average circuit.

3. The automatic beam limiter circuit of claim 1, wherein the comparison circuit comprises:

a first calculator for calculating the first calculation value by subtracting the vertical average from the reference value;

5 a second calculator for calculating the second calculation value by subtracting the reference value from the horizontal average;

a comparator for comparing the first calculation value and the second calculation value; and

10 a multiplexer for outputting the horizontal average as the second comparison signal when the second calculation value is larger than the first calculation value, and outputting zero (0) as the second comparison signal when the second calculation is smaller than the first calculation value.

15 4. The automatic beam limiter circuit of claim 1, wherein the portion of the digital signal is a scanned line of the digital signal on the CRT.

5. The automatic beam limiter circuit of claim 1, wherein the first comparison signal is the first calculation value.

20 6. The automatic beam limiter circuit of claim 1, wherein the gain control circuit comprises:

a third calculator for adding the first comparison signal to a feedback limited signal;

a latch for latching the output of the third calculator;
a limiter for limiting the output signal of the latch within a predetermined range and feeding back the limited signal to the third calculator; and
a fourth calculator for subtracting the second comparison signal from the limited
5 signal to produce the control gain signal.

7. A television receiver including an automatic beam limiter circuit for controlling a brightness/contrast of a video signal input to a cathode ray tube (CRT), wherein the automatic beam limiter circuit comprising:

10 a conversion circuit for converting an analog signal to a digital signal, wherein the analog signal is generated from the video signal;

an average calculator for calculating a horizontal average and a vertical average of the digital signal at least a portion of the digital signal;

15 a comparison circuit for comparing a first calculation value calculated between a reference value and the vertical average with a second calculation value calculated between the reference value and the horizontal average, and outputting a first comparison signal and a second comparison signal, wherein the first comparison signal is the first calculated value, and the second comparison signal is zero (0) or the second calculated value according to the comparison results; and

20 a gain control circuit for producing a gain control signal in response to the first comparison and second comparison signals for adjusting the brightness/contrast of the video signal input to the CRT.

8. The television receiver of claim 7, wherein the second comparison signal is the second calculated value when the first calculated value is smaller than the second calculated value, and the second comparison signal is zero (0) when the first calculated value is larger than the second calculated value.

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9. The television receiver of claim 7, wherein the first calculation value is calculated by subtracting the vertical average from the reference value, the second calculation value is calculated by subtracting the reference value from the horizontal average.

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10. The television receiver of claim 7, wherein the portion of the digital signal is a scanned line of the digital signal on the CRT.